SUMMARY ON

ENVIRONMENTAL IMPACT ASSESSMENT

REPORT

OF

AR ISPAT

Expansion of Steel Plant
[Up gradation of existing 2 x 7 T Induction Furnaces to 2 x 12 T
&
Establishment of New 3 x 12 T Induction Furnaces,
New 1 x 500 TPD Rolling Mill]

at
Plot No. 232, OP Jindal industrial Park , Sector -B,
Punjipathra Village, Gharghoda Tehsil, Raigarh District, Chhattisgarh

Submitted to

CHHATTISGARH ENVIRONMENT CONSERVATION BOARD

Chhattisgarh

1.0   PROJECT DESCRIPTION

A.R. ISPAT has obtained Consent from Regional Office, Chhattisgarh Environment Conservation Board (CECB), Raigarh vide letter no. 747 & 748/RO/TS/CECB/2018 dt. 05.07.2018 for establishment of 2 x 7 T Induction Furnace for manufacturing of 30,000 TPA of MS Ingots / Billets at Plot No. 232, O.P. Jindal Industrial Park, Village Punjipathra, Tehsil Gharghoda, District Raigarh, Chhattisgarh.

Now, we proposed to upgrade existing 2 x 7 T to 2 x 12 T Induction Furnace and establishment of New 3 x 12 T Induction Furnace and 1 x 500 TPD Rolling Mill in the existing plant premises only. The total land available for the project is 6.2 Acres ehich is taken on lease from M/s. Jindal Steel & Power Limited.

As per the Ministry of Environment, Forest & Climate Change (MOEF&CC), New Delhi notification, dated 14th September, 2006 and its subsequent amendments, all the non – toxic secondary metallurgical processing industries are falling under Sl. No. 3 (a), classified as Category 'B' for the grant of Environmental Clearance at State Level. SEIAA, C.G. has accorded Terms of Reference (TOR) for the proposed expansion project vide letter no. **344/ SEAC-C.G /RO and IND /RAIPUR/733** dated **7th December 2018**. The EIA Report has been prepared considering the TOR issued by MOEF&CC.

Pioneer Enviro Laboratories & Consultants Private Limited, Hyderabad, which is accredited by NABET, Quality Council of India, vide certificate No. NABET/ EIA/ 1619/ RA 026, for preparing EIA report for Metallurgical Unit, have prepared Draft Environmental Impact Assessment (EIA) report for the proposed expansion project by incorporating the TOR approved by Ministry of Environment, Forests & Climate Change, New Delhi. The report contains detailed description of the following:

- Characterization of status of environment with in an area of 10 km radius from the plant for major environmental components including air, water, noise, soil, flora, fauna and socio-economic environment.
- Assessment of air emissions, liquid waste and solid waste from the proposed expansion project along with the noise level assessment.
- Environmental Management Plan comprising of emission control measures proposed to be adopted in the proposed expansion project, solid waste management, Greenbelt development.

- Post Project Environmental Monitoring & Budget for Environmental Protection Measures.

1.1 ENVIRONMENTAL SETTING WITHIN 10 Km. RADIUS OF THE PLANT SITE

The following is the environmental setting within the 10 Km. radius of the Plant site:

Salient Features / Environmental features	Distance w.r.t. site / Remarks
Type of Land (for Expansion)	The plant is situated in Industrial Park developed by O.P. JINDAL GROUP. The expansion project will be taken up in the existing plant premises & partly in additional land.
Type of Land (Study Area)	As per LULC the land use within 10 Km. is as follows: Settlements –2.9 %; Industrial Area- 7.6 %; Water Bodies – 6.8 %; Scrub Forest & Dense Forest area – 34.4%; Single crop land – 17.4 %; Double Crop Land – 5.2%; Plantation -1.1%; Land with scrub – 17.6 %; Land without scrub – 5.2 % & Gullied land – 1.8 %.
National Park/ Wild life sanctuary / Biosphere reserve / Tiger Reserve / Elephant Corridor / migratory routes for Birds	There are no notified National Park/ Wild life sanctuary / Biosphere reserve / Tiger Reserve/ migratory routes for Birds with in 10 Km. radius of the plant. **However, movement of Elephants is observed within 10 Kms. radius of the plant, as per the secondary source. Conservation plan is prepared.**
Historical places / Places of Tourist importance / Archeological sites	Banjari temple is situated at a distance of 4.0 Kms. from the plant.
Industrial areas / cluster (MoEF&CC office memorandum dated 13thJanuary 2010)	Nil
Defence Installations	Nil
Nearest village	Tumidih village is the Nearest habitation - 0.4 Kms.
No. of Villages in the Study Area	45 Nos.
Nearest Hospital	PHC is near to the Industrial Park
Reserved forests	Taraimal RF (0.3 Kms.), Samaruma RF (3.5 Kms), Suhai RF (5.8 Kms.), Rabo RF (6.4 Kms), Urdana RF (6.0 Kms.) Punjipathra PF (0.7 Kms.), Pajhar PF (4.5 Kms.), Maghat P.F. (5.3), Kharidungri PF (9.0 Kms.), Lakha PF's (8.0 Kms.) exist within 10 Km. radius of the plant site.
Water body	Kelo river (6.8 Kms.), Kurket River (6.4 Kms.), Rabo Dam back water (7.4 Kms.) & Few seasonal nalas, ponds exists within 10 Km. radius of the plant site & Few seasonal nalas, ponds existwithin 10 Km. Radius of the plant site.
Crops in the Study Area	Major Crops - Paddy, Arhar, Mung, Groundnut Minor crops - Wheat, Maize, gram, Masur, Urad etc. Horticulture crops – Lemons, Papaya, Banana, Leechie, Potato, Mango, Tomato, Onion, Cabbage, Chilly, Ginger etc.

Salient Features / Environmental features	Distance w.r.t. site / Remarks
Nearest Railway station	Nil (Bhupdeopur R.S. – 11 Kms.)
Nearest Highway	Raigarh – Ambikapur State Highway - 2.1 Kms.
Nearest Port facility	Nil
Nearest Airport	Nil (Jindal Air strip – 13 Kms.)
Nearest Interstate Boundary	No interstate boundary within 10 Km radius of the plant site.
Seismic zone as per IS-1893	Seismic zone – II
R & R	There is no rehabilitation and resettlement issue, as the existing land & additional land acquired is Industrial land.
List of Industries / Mining activity	The following industries are situated in O.P. Jindal Industrial Park.

List of Industries with the Industrial Park

S.No.	Name of the Industry	Type	Plant Configuration & Product Capacity
1.	M/s. Alok Ispat Pvt. Ltd.	Steel Plant	1x7 MT IF -18000 TPA
2.	M/s. Ganga Ispat Pvt. Ltd.	Steel Plant	1x7 MT IF -18900 TPA
3.	M/s. G.P.Global India Pvt. Ltd.	Steel Plant	1x7 MT IF - 18900 TPA
4.	M/s. Narmada Iron and steel Pvt. Ltd.	Steel Plant	2x6 MT IF - 33500 TPA
5.	M/s. Epic Alloys Steel Pvt. Ltd.	Steel Plant	2x 5 MT IF - 31500 TPA
6.	M/s. Eureka Iron and Energy Pvt. Ltd	Steel Plant	1x6 MT IF - 18000 TPA
7.	M/s. Harsh Vinimay Pvt. Ltd.	Steel Plant	1x7 MT IF - 18900 TPA
8.	M/s. Jagdamba Sponge Pvt. Ltd.	Steel Plant	1x6 MT IF - 18000 TPA
9.	M/s. Maabanjari Ispat Pvt. Ltd.	Steel Plant	1x7 MT & 1x10 MT IF - 59000 TPA
10.	M/s. Mamta Electro casting Pvt. Ltd.	Steel Plant	1x6 MT IF - 18000 TPA
11.	M/s. Shri Nirmalanand Steel Casting Pvt. Ltd.	Steel Plant	1x6 MT IF +Rolling-59000 TPA
12.	M/s. R.S. Ispat Pvt. Ltd.	Steel Plant	2x10 MT & 2x12 MT IF - 1,20,000 TPA
13.	M/s. Radhe Govind Steel and Alloy	Steel Plant	1 x 6 MT IF - 14500 TPA
14.	M/s. Raigarh Iron and industries	Steel Plant	2 x 50 TPD - 24000 TPA
15.	M/s. Rajat IspatPvt. Ltd.	Steel Plant	1 x 6 MT IF - 18000 TPA
16.	M/s. Satguru IspatPvt. Ltd	Steel Plant	1x6 MT IF - 18000 TPA
17.	M/s. Sai Ram Steel Pvt. Ltd	Steel Plant	1x6 MT IF - 25200 TPA
18.	M/s. Shova IspatPvt. Ltd	Steel Plant	Closed
19.	M/s. Shri Banke Bihari IspatPvt. Ltd.	Steel Plant	1x6 MT IF - 18000 TPA
20.	M/s. Shree Ram Hi Tech Steel & Power (P) Ltd.	Steel Plant	1x6 MT IF - 18000 TPA
21.	M/s. Sri Balaji Ispat	Steel Plant	1x6 MT IF - 18000 TPA
22.	M/s. Shree Consultant Pvt. Ltd.	Steel Plant	2x6 MT IF - 33000 TPA
23.	M/s. Suryoday Steel Plant Pvt. Ltd.	Steel Plant	1x6 MT IF - 18000 TPA
24.	M/s. Zeon Steel Pvt. Ltd.	Steel Plant	2x6 MT IF - 33000 TPA
25.	M/s. Siddhi Vinayak Oxygen Pvt. Ltd	Oxygen Plant	250 cu/m/h - 75000 cylinder/Year
26.	M/s. Orion Ferro Alloys	Ferro Alloys	1x 4 MVA - SiMn–8000 TPA
27.	M/s. Vandana Energy Pvt. Ltd	Ferro Alloys	1x 6.5 MVA – SiMn - 5000 TPA; (OR) FeMn - 6000TPA

	Salient Features / Environmental features		Distance w.r.t. site / Remarks	
28.	M/s. V.A. Power Pvt. Ltd	Ferro Alloys	1x9 MVA – FeMn - 14400 TPA (OR) SiMn - 14400 TPA	
29.	M/s. Ajay Ingot Rolling mills Pvt. Ltd.	Steel Plant	3x10 MT IF + Rolling - 59000TPA	
30.	M/s. Tirumala Balaji Alloys Pvt. Ltd.	Ferro Alloys	3x9 MVA – 48,000 TPA	
31.	M/s NR TMT (India) Pvt. Ltd.	Steel Plant	3x7 MT IF + Rolling - 55000TPA	

1.2   Plant Configuration and Production Capacity

The proposed Steel Plant envisages manufacturing of the following products:

S.No.	Unit	Consent obtained dt.05.07.2018	Present Proposal	After Present Proposal
1	Induction Furnaces (Hot Metal / MS Ingots / Billets)	2 x 7 T (30,000 TPA)	Up gradation of Existing 2 x 7 T to 2 x 12 T & Establishing new 3 x 12 T	1,80,000 TPA (5 x 12 T)
2	Rolling Mill (TMT bars / CTD Bars / Angle / Channel / MS Pipe / Patti / Square Bars)	---	1 x 500 TPD (1,70,000 TPA)	1 x 500 TPD (1,70,000 TPA)

1.3   Raw Materials

The following will be the raw material requirement for the proposed expansion project:

S.No.	Raw Material	Quantity	Sources	Mode of Transport
1	**For Induction Furnace (Hot Metal / MS Ingots / Billets) - 1,80,000 TPA (including existing)**			
a)	Sponge Iron	1,50,000 TPA	Chhattisgarh & Orissa	By Road (through covered trucks)
b)	Scrap	64,000 TPA	Chhattisgarh & Orissa	By road (through covered trucks)
c)	Ferro Alloys	2700 TPA	Chhattisgarh & Orissa	By road (through covered trucks)
2	**For Rolling Mill** **(TMT bars / CTD Bars / Angle / Channel / MS Pipe / Patti / Square Bars) – 1,70,000 TPA**			
a)	Steel billets	1,80,000 TPA	Own generation	----
b)	Furnace oil	20,400 TPA	Nearby HPCL / IOCL depots	Tankers
c)	Coal for PG	40,800 TPA	Chhattisgarh & Orissa	By Road (through covered trucks)

1.4   Manufacturing Process

Manufacturing of Hot Metal / M.S.Ingots / M.S. Billets through Induction Furnace

In Steel Melting Shop (SMS) consisting of 2x7 T existing Induction Furnaces (to be upgraded to 2x12 T) & proposed 3x12 T Induction Furnaces , Sponge Iron will be melted along with melting scrap and other fluxes to make pure liquid steel and then to mould it in required size billets. The SMS will consist of Induction furnace, Ladles, Cranes & Continuous Casting Machine (CCM). Either the Hot Metal produced from LRF will be directly sent to Rolling Mill through Direct Charging OR Hot Metal will be sent to CCM to manufacture M.S. Billets / Ingots which will be sent to Rolling Mill through Re-heating the Billets in Re-heating Furnace by Conventional Rolling Mill method.

It is proposed to produce a total of 1,80,000 TPA of Hot Metal / M.S. Billets / M.s. Ingots through 5x12 T Induction.

Manufacturing of Rolled products through Rolling Mill

The Hot Metal produced from Existing & Proposed Induction Furnaces (5x12 T) i.e. from will be directly sent to Rolling Mill to produce Rolled Products called as Hot Charging method. In the other method the hot metal generated will be sent through CCM to produce M.S. Billets / M.s. Ingots, which will be sent to Reheating furnace for the heating and will be sent to Rolling Mill. Furnace will be heated with Prodcuer Gas / Furnace oil. A bar and round mill will be installed in the plant to produce 500 TPD of TMT bars / CTD Bars / Angle / Channel / MS Pipe / Patti / Square Bars.

1.5   Water Requirement

Water required for the proposed expansion project will be 180 KLD and same will be sourced from Ground water. Water drawl permission will be obtained from CGWA. Water requirement for the existing plant is 35 KLD. Total water requirement after expansion will be 205 KLD. The following is the break-up of the water requirement for entire project.

Break-up of Water requirement

S.No.	Unit	Quantity in KLD		
		Existing Plant	Proposed Expansion	Total after Expansion
1.	Induction Furnaces	20	60	80
2.	Rolling Mill	---	90	90

3.	Make up water for scrubber	---	5	5
4.	Dust Suppression & Greenbelt development	10	5	15
4.	Domestic	5	10	15
	Total	**35**	**170**	**205**

1.6   Waste Water Generation

In the proposed project, The wastewater generated from the proposed unit will be sent to Settling pond after it will be recycled again as closed circuit cooling system is provided. Scrubber blowdown will be recycled back. Oil & grease traps will be provided, to treat if water is getting mixed with oil, grease and cleaning agents. Sanitary waste water generation from existing & expansion projects will be **12 KLD** and will be treated in STP. The treated sewage will be utilized for Greenbelt development.

1.7   Wastewater Characteristics

PARAMETER	Sanitary waste water untreated
pH	7.0 – 8.5
BOD (mg/l)	200 – 250
COD (mg/l)	300 – 400
TDS (mg/l)	800 – 900

2.0   DESCRIPTION OF ENVIRONMENT

Base line data has been collected on ambient air quality, water quality, noise levels, soil quality, flora and fauna and socio economic details of people within 10 km radius of the plant.

2.1   Ambient air quality

Ambient air quality was monitored for $PM_{2.5}$, PM_{10}, SO_2, NOx & CO at 8 stations including project site during **15th October 2018 to 15th January 2019**.. The following are the concentrations of various parameters at the monitoring stations:

Parameter		Concentration
$PM_{2.5}$	:	20.9 to 46.3 $\mu g/m^3$
PM_{10}	:	36.7 to 81.5 $\mu g/m^3$
SO_2	:	7.3 to 25.8 $\mu g/m^3$
NO_X	:	7.4 to 33.9 $\mu g/m^3$
CO	:	412 to 1378 $\mu g/m^3$

2.2 Water Quality

2.2.1 Surface Water Quality

Three (3) nos. of Surface water samples have been collected, 1 no. of surface water sample have been collected each from Kelo river (6.8 Kms.), Kurket River (6.4 Kms.) & from Tumidih Pond (1.1 Kms.) to assess surface water quality. The analysis of samples shows that all the parameters are in accordance with BIS-2296 specifications.

2.2.2 Ground Water Quality

8 No. of ground water samples from open wells / bore wells were collected from the nearby villages to assess ground water quality impacts and analyzed for various Physico-Chemical parameters. The analysis of samples shows that all the parameters are in accordance with BIS: 10500 specifications.

2.3 Noise Levels

Noise levels were measured at 8 locations during day time & Night time. The noise levels at the monitoring stations are ranging from **44.40 dBA to 53.40 dBA.**

3.0 ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

3.1 Prediction of impacts on air quality

The likely emissions from the proposed expansion project are PM_{10}, NOx & CO. The predictions of Ground level concentrations have been carried out using Industrial Source Complex (ISC-3) model. Meteorological data such as wind direction, wind speed, max. and min. temperatures collected at the site have been used as input data to run the model.

The predicted max. Incremental PM_{10} concentrations (24 hourly) due to the proposed expansion project will be 0.63 $\mu g/M^3$ at a distance of 1100 m from the stack in the down wind direction over the baseline concentrations.

The predicted incremental rise in Particulate Matter concentration due to the Vehicular emission will be 0.3 $\mu g/m^3$.

The predicted max incremental SO_2 concentrations (24 hourly) due to the proposed expansion project will be 7.7 µg/m^3 at a distance of 1100 m from the stack in the down wind direction over the baseline concentrations.

The predicted max incremental NOx concentrations (24 hourly) due to the proposed expansion project will be 4.15 µg/m^3 at a distance of 1100 m from the stack in the down wind direction over the baseline concentrations.

The predicted incremental rise in NOx concentration due to the Vehicular emissions will be 2.2 µg/m^3.

The predicted incremental rise in CO concentration due to the Vehicular emission will be 1.5 µg/m^3.

The net resultant concentrations (Maximum baseline conc. + predicted incremental rise in conc.) of PM, NO_X & CO are shown in Table below by considering the emissions from other industries in the area will be well within the National Ambient Air Quality Standards (NAAQS) when the expansion project commences the operation. Hence there will not be any adverse impact on air environment due to the proposed expansion.

Net Resultant maximum concentrations due to the proposed expansion project

Item	PM$_{10}$ (~g/m^3)	SO$_2$ (~g/m^3)	NO$_X$ (~g/m^3)	CO (~g/m^3)
Maximum baseline conc. in the study area	80.5	20.3	33.9	1378
Maximum predicted incremental rise in concentration due to proposed expansion project (Point Sources)	0.63	7.7	4.15	Nil
Maximum predicted incremental rise in concentration due to proposed expansion project (Vehicular emissions)	0.30	Nil	2.2	1.5
Net resultant concentrations during operation of the expansion project	**81.43**	**28.0**	**40.25**	**1379.5**
National Ambient Air Quality Standards	**100**	**80**	**80**	**2000**

The net resultant Ground level concentrations during operation of the expansion project are within the NAAQS. Hence there will not be any adverse impact on air environment due to the proposed expansion project

3.2   Prediction of impacts on noise quality

The major noise generating sources are Furnace & DG set. Silencer will be provided to the DG Set. The ambient noise levels will be within the standards prescribed by MoEF i.e. the noise levels will be less than 75 dBA during day time and less than 70 dBA during night time. 2.3 acres of extensive greenbelt will be developed covering more than 1/3rd of the total area helps in further attenuating the noise levels. Hence there will not be any adverse impact due to noise on population in surrounding areas due to the proposed expansion project.

3.3   Prediction of impacts on Water Environment

In the proposed project, The wastewater generated from the proposed unit will be sent to Settling pond after it will be recycled again as closed circuit cooling system is provided. Scrubber blowdown will be recycled back. Oil & grease traps will be provided, to treat if water is getting mixed with oil, grease and cleaning agents. Sanitary waste water generation due to existing & expansion units will be **12 KLD** and will be treated in STP. The treated sewage will be utilized for Greenbelt development & Dust suppression.

3.4   Prediction of Impacts on Land Environment

Zero effluent discharge will be adopted. All the required air pollution control systems will be provided to comply with CPCB / CECB norms. All solid wastes will be disposed / utilized as per CPCB / SPCB norms. 2.3 Acres of greenbelt has already been developed as per guidelines. Hence there will not be any adverse impact on land environment due to the proposed expansion project.

3.5   Prediction of Impacts on Biological Environment

- There are no National Parks, Wild life Sanctuaries and Bird Sanctuaries within 10 Km. radius of the plant site. The area is known to have Elephant movement. Conservation plan has been prepared.

- Taraimal RF (0.3 Kms.), Samaruma RF (3.5 Kms), Suhai RF (5.8 Kms.), Rabo RF (6.4 Kms), Urdana RF (6.0 Kms.) Punjipathra PF (0.7 Kms.), Pajhar PF (4.5 Kms.), Maghat P.F. (5.3), Kharidungri PF (9.0 Kms.), Lakha PF's (8.0 Kms.) exist within 10 Km. radius of the plant site.

- All the required Air emissions control systems in the expansion project will be installed and operated to comply with MOEF/CPCB/CECB norms.
- Zero liquid effluent discharge is being maintained in the existing plant and similar practice will be maintained after expansion also.
- All solid waste disposal will be in accordance with the norms.
- Extensive Greenbelt of 2.3 acres will be developed in the plant premises.

When all norms are complied and with proper implementation of Environment Management Plan, there will not be any adverse impact on flora & Fauna due to the proposed expansion.

3.6   Socio - Economic Environment

There will be lot of opportunities in employment to local people during construction as well as in operation phase. There will be further upliftment in Socio Economic status of the people in the area. Hence there will be further development of the area due to the proposed expansion project.

4.0   ENVIRONMENTAL MONITORING PROGRAMME

Post project monitoring will be conducted as per the guidelines of CECB and MoEF&CC are tabulated below:

MONITORING SCHEDULE FOR ENVIRONMENTAL PARAMETERS

S.No.	Particulars	Frequency of Monitoring	Duration of sampling	Parameters required to be monitored
1. Water & Waste water quality				
A.	Water quality in the area	Monitored on quarterly basis.	Grab sampling	As per IS: 10500
B.	Sanitary waste water	Once in a month	Grab sampling	As per EPA Rules1996
2. Air Quality				
A.	Stack Monitoring	Online monitors Once in a month		PM PM, SO_2 & NOx
B.	Ambient Air quality	Once in a month	24 hours continuously	$PM_{2.5}$, PM_{10}, NOx & CO
C.	Fugitive emissions	Quarterly basis	8 hours	PM
3. Meteorological Data				
	Meteorological data	Daily	Continuous	Temperature, Relative

	to be monitored at the plant.		monitoring	Humidity, rainfall, wind direction & wind speed.
4. Noise level monitoring				
	Ambient Noise levels	Twice in a year	Continuous for 24 hours with 1 hour interval	Noise levels

5.0   ADDITIONAL STUDIES

No rehabilitation and resettlement is required as the plant is located in O.P. Jindal Industrial Park.

6.0   PROJECT BENEFITS

With the establishment of the proposed expansion project employment potential will increase. Land prices in the area will increase. The economic status of the people in the area will improve due to the proposed project. Top priority will be given to locals in employment. A separate budget will be allocated for CER activities which will be implemented in the nearby villages. These activities will help in contributing to the development of villages in the nearby areas.

7.0   ENVIRONMENT MANAGEMENT PLAN

7.1   Air Environment

The following are air emission control systems proposed in the expansion project:

S.No.	Stack attached to	No. of Stacks	Control Equipment	Particulate emission at the outlet
1.	2 x 12 T Induction Furnaces (after modernization of existing Furnaces)	1 no. (twin flue)	Modification of existing Fume extraction system followed by Bag filter (2 nos.)	< 30 mg/Nm^3
2.	3 x 12 T Proposed Induction Furnaces	1 no. (tri flue)	Fume extraction system followed by Bag filter (3 nos.)	< 30 mg/Nm^3
4.	Rolling Mill (1 x 500 TPD)	1 no.	Scrubber	< 30 mg/Nm^3

➤ All bins will be totally packed and covered so that there will not be any chance for dust leakage.

➤ All discharge points and feed points, wherever the possibility of dust generation is there a de-dusting suction point will be provided to collect the dust.

7.2   Water Environment

The wastewater generated from the proposed unit will be sent to Settling pond after it will be recycled again as closed circuit cooling system will be adopted. Scrubber blow-down (2 KLD) will be recycled back. The sanitary wastewater generated from existing & expansion projects will be 12 KLD and will be treated in STP.

7.3   Noise Environment

The major sources of noise generation in the proposed expansion project will be Furnace & DG set, etc. Silencer will be provided to D.G. set. All the machinery will be manufactured in accordance with MoEF&CC norms on Noise levels. The employees working near the noise generating sources will be provided with earplugs. The extensive greenbelt will be developed within the plant premises and will help in attenuating the noise levels further.

7.4   Land Environment

There will be no effluent generation from the manufacturing process as closed circuit cooling system will be adopted. Sanitary waste water will be treated in STP.

Solid wastes will be disposed off as per norms. Extensive greenbelt will be developed in the plant premises. Hence there will not be any impact due to the proposed expansion project.

Solid waste generation and disposal

following will be the solid waste generation & proposed method of disposal.

S.No.	WASTE	After Proposed Expansion (in TPD)	METHOD OF DISPOSAL
1	Slag	60	Slag from SMS will be crushed and iron will be recovered & remaining non-magnetic material being inert by nature will be used as sub base material in road construction / will be given to brick manufacturers / will be sent to common disposal yard within the Industrial Park
2	Mill scales	6	Mill scales will be given to nearby Ferro alloys manufacturing units or casting units.
3	End Cuttings	19	Recycled back as raw material in own induction Furnaces
4	Coal Tar	0.3	Will be Given to TAR recyclers or Road making contractors.
5	Cinders	15	Ash will be given to nearby Bricks manufacturing units.
6	STP sludge	0.1	Will be used as Manure for plantation.

Note:
Solid wastes such as slag will be stored in designated storage yard. All stock piles will be made on top of a stable liner to avoid leaching of materials to ground water.

7.5 Greenbelt Development

Extensive Greenbelt of 2.3 Acres will be developed in the existing plant premises covering more than 1/3rd of the total area.

Capital Cost for Environment Protection for proposed plant   : Rs. 2.35 Crores

Recurring Cost per annum for Environmental protection   : Rs.25 Lakhs

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